

## **PHASE II DETAILED FEASIBILITY**

### **BUSINESS OF TRANSPORTATION**

#### **INTRODUCTION**

In the Preliminary Feasibility Analysis phase of the study (Phase I), nine new business services supporting the shipment of goods were identified. These business types, classified as “business of transportation” services, were advanced into more detailed analysis in Phase II. Early in the Phase II study, two of the nine candidates, East-West Rail Route Improvements and Inland Operational Support of Washington Seaports, were found to be related more to statewide transportation strategies than with regional economic development efforts. Due to the larger impact of these two candidates, they were moved into the Phase III evaluation of strategic public investments, without substantial review in Phase II.

Therefore, this technical interim report summarizes the findings of the feasibility analysis for the following seven “business of transportation” candidates:

- Eastern Washington Export Consolidation and Shipment Center
- Domestic Automobile Distribution Center
- Rail Equipment Repair and Rehabilitation Center
- Rail Equipment/Empty Container Center
- Rail Servicing Center
- Rail Servicing Center, National Strategic Trade Corridor
- Transportation Equipment Control and Tracking Center

The detailed feasibility report also conveys the starting point for continuing evaluation of strategic transportation issues into Phase III, and provides a summary of the interim findings developed for those issues.

#### **SEPARATE FOCUS ON TRANSPORTATION**

As in Phase I, this stage of the feasibility study includes a wide array of economic development opportunities that are being tested against the general criterion of whether investments in the Hanford properties would be in the best interests of the state of Washington and/or the Port of Benton. The development potential of industrial, commercial, and other uses are critical elements to the success of any investment on the site. However, the primary interest of the state and Port are with the opportunities and needs of the transportation system. Currently, both the state and Port maintain the transportation facilities.

Therefore, the need to address transportation-specific values of the Hanford site has been facilitated by identifying and considering “business of transportation” opportunities as separate and distinct from “industrial development” opportunities.

## **INDUSTRY INPUT AND ADVICE: SPECIAL TRANSPORTATION INDUSTRY FOCUS GROUP**

An important part of the study was obtaining advice and input from individuals with relevant knowledge regarding the business of transportation options being considered. Review and comment on transportation candidates was regularly provided by the Stakeholder Advisory Committee during the Phase I and II processes, and individual interviews were completed.

In addition to the advisory committee, consultation with industry experts was obtained using a cross-section of representatives termed the Transportation Industry Focus Group. Questions and discussions that were provided by the group are reported throughout this interim report. The focus group requested that only a single consensus opinion of the group be considered in the study. The consensus conclusions concerning the seven candidate businesses and the two strategic transportation issues are provided as Attachment A.

## **PHASE II EVALUATION PROCESS**

This evaluation relied principally on forecasted demand for services, which is a basic bottom line of transportation business feasibility, but also included the nature and risk of public investment. In addition, each candidate was tested against the feasibility criteria established in Phase I, and a summary evaluation was completed. The general categories of analysis were:

- Market and demand analysis
- Development and public investment requirements
- Evaluation of potential for success or failure
- Feasibility summary
- Feasibility conclusion

## **FEASIBILITY ANALYSES FOR EACH TRANSPORTATION CANDIDATE**

### **1. Eastern Washington Export Consolidation and Shipment Center**

This business is defined as a centralized location for receiving and intermodal transfer of containerized agricultural products for rail movement to ports of Seattle and Tacoma.

#### ***Demand/Marketplace***

The market analysis focused on five dominant eastern Washington and eastern Oregon export commodities. These commodities move from point of production to the seaports almost exclusively in containers transported by truck and truck/barge (to Portland). The target products for consolidation and movement by train included hay, apples, potatoes, beef, and forest products.

Summaries of the analysis were:

- Some production locations and commodities (hay and apples) dictate movement by trucking or by a trucking/barge combination.

- Attaining competitive rail rates for regular “short train” movements from a consolidation point would require garbage-train level volumes (200 TEU daily); double-handling is an additional cost.
- Without high volumes, waiting for periodic “short trains” (e.g., once or twice a week) would not be meet deliver requirements.
- To develop adequate volumes, all of current production levels of beef, potatoes and forest products would have to be consolidated.
- Barging to Portland is increasing because of access to more export shipping lines via joint ventures.
- Most shippers have reasons other than cost for not transferring to rail.
- Except for forest products, those commodities that could transfer to rail might bear significant increases in transportation costs.
- With the exception of forest products, all other commodities would incur significant additional transportation costs.

The detailed market analysis is found in its entirety as Attachment B to this report section.

### ***Development/Public Investment Requirements***

Access by both railroads would be mandatory and include reasonable switching costs for arriving and departing trains. Development requirements would include a 25-acre heavy container paving storage site equipped with intermodal storage and staging tracks, storage building and cross-dock, truck control gate and administrative offices. Such a facility could be sited within the Horn Rapids Rail Center or north onto the Reservation focus area if rail access/service is retained.

Experience of the seaport operations infers that this type of multi-use facility would not likely be developed by the railroads even with reasonably high volumes and use. The railroads’ general reluctance to become involved with large capital investments not directly associated with through-train operations would require that a public entity provide this entire facility as an investment.

As a result, operating costs and long-term risks of gaining a return on investment would be borne by the public. The estimated capital investment would be \$6 million. Jobs created would be dependent upon volumes handled, but is estimated to be no more than 100 persons at full capacity. There would be relatively little opportunity for spin-off industry. Financial justification for this type of development would require a clear and compelling demand for the services and the long-term commitment of users.

### ***Evaluation of Potential for Success***

This candidate was originally suggested by the consulting team, and was supported in concept by members of the Industry Focus Group. The drivers to make this candidate successful would be competitive cost and reliability in movement of goods that are tied to the railroads’ business interests in running “short trains” from a consolidation center. The possible statewide interest of reducing trucks on the highways would require a major subsidy for today’s marketplace and there is no indication that would change over the 20-year planning horizon. This candidate would be a costly investment for the public entity that

requires long-term risk and produces relatively few jobs. There is no demand for this service in the immediate future and it is not anticipated that a demand will be generated in a timeframe that would require it to be included in a coordinated development program. However, long range changes in the market place could make this a viable service in the future.

### ***Feasibility Summary***

The general feasibility criteria as developed in Phase I are summarized below:

- Reduce system costs? ---Very likely to increase costs significantly.
- Improve system reliability? ---Would slow most shipments.
- Reduce system inventory? ---Change in mode only.
- Specific demand? ---Not for immediate future or otherwise forecasted.
- Required land available and cost effective? ---Yes, but heavy public investment.
- Labor availability and cost effective? ---Yes
- Required markets? ---No
- Business environment? ---Yes
- Water and utilities? ---Yes
- Required returns on investment? ---Questionable and risky
- Acceptable level of public investment? ---Moderate, risky

Using the Screening Criteria of Technical Memorandum #2 for Freight Intermodal Service Center:

- One or more Class 1 Railroads and interstate highways? ---Yes
- Proximity to population center? ---No
- Or, proximity to a critical point of route geography? ---No
- Direct access to one or more Class 1 Railroad Intermodal Networks? ---No
- Site availability in proximity to Class 1 Railroad mainlines? ---Yes
- Clear and reasonable basis for assuming specific need? ---No
- Otherwise identified demand? ---No

### ***Feasibility Conclusion***

The conclusion is that there is little basis for forecasting a significant demand for this type of transportation service for the next 20 years. The market place will control the modes of transport during this period. Rail pricing, service levels, and capacity issues will continue to favor trucking and barging. Export competitiveness of these commodities does not appear to be adversely impacted by the current situation. This transportation situation is not expected to change significantly for the future. Consequently, it was not found to be feasible.

## **2. Domestic Automobile Distribution Center**

This business service type is defined as a regional intermodal center for mass receiving of domestic automobiles by rail, and which also consolidates storage, component additions, staging, and transfer to trucking for distribution throughout the Pacific Northwest.

### ***Demand/Marketplace***

The market analysis for this business opportunity assessed the realities of distribution of domestic autos in today's market and reviewed the cost effectiveness of consolidating distribution in the future as originally suggested by the manufacturers approximately five years ago. Factors evaluated in this analysis included the size of the market, origins of domestic manufacturing, existing logistics of distribution and relative change in distribution costs if consolidated in south central Washington.

A summary of the analysis is:

- Domestic manufacturing is wide spread throughout the nation; with numerous origins
- Essentially all domestic cars move to distribution points by rail
- Current intermodal transfer is carried out at large city rail ramps that are located near the seaports of Seattle, Tacoma and Portland.
- Pacific Northwest domestic export volumes match import volumes at seaports
- Proximity to seaports, is the driver for the west side location of existing rail ramps.
- Eastside consolidation would significantly raise transportation costs of domestic autos and impact back-haul opportunities for import autos

Conclusions are that the additional costs of \$84 per car and impacts to back haul opportunities (not priced) will dominate marketplace decisions over the 20-year planning horizon.

The detailed market analysis is found in its entirety as Attachment C to this report section.

### ***Development/Public Investment Requirements***

A domestic automobile distribution center would require reasonable switching costs for both arriving and departing trains. Development requirements would include a 75-acre light paving auto storage yard, auto rail staging and unload facility, truck loading facility, truck loading facility, truck control gate, and administrative offices. Such a facility could be sited within the Horn Rapids Rail Center or north on the Reservation focus area if rail is retained.

As with the export consolidation center, seaport personnel believe that this type of multi-use facility would not be developed by the railroads even with reasonably high volumes and use. The railroads' avoidance of long term risk and reluctance to become involved with large capital investments not directly associated with through-train operations would require that a public entity provide this entire facility as an investment. Operating costs and long term risk of gaining a return on investment would be borne by the public. The estimated capital investment would be \$16,900,000. Jobs created would be dependent upon volumes handled, estimated to be no more than 125 at full capacity. There would be relatively little opportunity for spin-off industry. Financial justification for this type of development would require a clear and compelling demand for the services and long term commitment of users.

### ***Evaluation of Potential for Success***

This candidate service was originally suggested by the consultant team because a similar proposal was made by domestic manufacturers approximately 5 years ago. The Burlington Northern Santa Fe (BNSF) Railway considered expanding its Pasco Yard to add this type of business. Reportedly, the project was dropped because of the need for BNSF financing, as well as development and operation of the facility. BNSF would have had to give competitive access to the Union Pacific Railroad and recovery of their investment would have been limited to user charges.

The drivers for domestic manufacturers to seek a consolidation center reportedly included a need to guarantee a 24-hr distribution delivery to every dealership in the Pacific Northwest. However, some speculate that there could have been other drivers such as gaining the competitive advantage of having a two-railroad facility. For the near future, the increased cost and lost import back haul opportunities variables associated with this opportunity will dictate the marketplace. The current market is apparently being adequately served from current rail ramps.

### ***Feasibility Summary***

A summary of the feasibility criteria developed in Phase I follows:

- Reduce system costs? ---Very likely to increase costs significantly.
- Improve system reliability? ---Increase trucking distance; slower response.
- Reduce system inventory? ---Increases trucking on highways.
- Specific demand? ---Not for immediate future or forecasted.
- Required land available and cost effective? ---Yes, but heavy public investment.
- Labor availability and cost effective? ---Yes
- Required markets? ---No
- Business environment? ---Yes
- Water and utilities? ---Yes
- Required returns on investment? ---Questionable and Risky
- Acceptable level of public investment? ---High, risky

Using the screening criteria of Technical Memorandum #2 for Freight Intermodal Service Center:

- One or more Class 1 railroads and interstate highways? ---Yes
- Proximity to population center? ---No
- Or, proximity to a critical point of route geography? ---Central to Pacific Northwest
- Direct access to one or more Class 1 Railroad Intermodal Networks? ---No but can assume special “auto train” system service
- Site availability in proximity to Class 1 Railroad mainlines? ---Yes
- Clear and reasonable basis for assuming specific need? ---No
- Otherwise identified demand? ---No

### ***Feasibility Conclusion***

This candidate was not found to be feasible.

### **3. Rail Equipment Repair and Rehabilitation Center**

This service is defined as a center that would provide cost-effective repair, rehabilitation, and overhaul of locomotives and rail cars and virtually unlimited storage and staging facility for railroad equipment undergoing those services.

#### ***Demand/Marketplace***

The market analysis for this business opportunity evaluated the demand for freight/ passenger locomotive and car repair, storage, and maintenance. In addition, light density rail needs and competition from the existing Hanford private operator, Livingston Rebuild Center (LRC), were analyzed. The analysis highlights the excellent base of business established by LRC and rail equipment technologies/rail skills training programs sponsored by LRC and Columbia Basin College. The potential for their existing business to grow and expand into rail equipment manufacturing and fabrication was a key element of the analysis.

Summaries of the analysis were:

- Rail traffic growth in the Pacific Northwest has prompted an upgrade and growth of locomotive fleets and leasing programs
- More powerful and fewer pieces of new equipment requires less maintenance, which is covered by warranty and will more often be completed by lessors of the equipment
- Cyclical demand for locomotives makes storage in conjunction with maintenance a plus; South Central WA is a good location
- Shortlines, passenger and light density rail equipment do not depend on external (third) party services; some niches exist such as the Alaska State Rail System
- UP has major facility in Pacific Northwest; BNSF uses some third party services
- Competition is high for capturing third party maintenance contracts; LRC is aggressive and competitive
- A key to LRC's success is its focus on developing a highly skilled and trained work force.
- Viability of the maintenance business is good and expected to grow at least modestly within the 20-year planning horizon.
- Expansion into rail equipment manufacturing and fabrication is a potential option also found feasible in the industrial development portion of the study

Slow, steady growth of the railroad freight and passenger industry will continue to provide opportunities to an aggressive third party service provider like LRC to expand their rail equipment maintenance business. The highly competitive marketplace will continue to be a challenge, but an increase in employment could more than double the current level to 60 people. Beyond the existing repair business, LRC has an opportunity to expand into manufacturing and fabrication of rail equipment. The industrial development team estimates the expansion will increase employment by 300 positions in the next 20 years.

The detailed market analysis is found in its entirety as Attachment D to this report section.

### ***Development/Public Investment Requirements***

Access by both UP and BNSF railroads is mandatory for this candidate to be viable. This business must include reasonable switching costs for arriving and departing rail equipment. The 9-mile connection to both mainlines using the former Reservation railroad provides access to the mainline and LRC offers common switching services. Other development requirements are met by the existing 1171 building and adjacent trackage. However, current operations lack certain necessary facilities (e.g., a paint-facility) that could be provided within an adjacent existing building. This development configuration is anticipated to serve forecasted growth in maintenance services with the exception of offering storage facilities.

Locomotives have already been stored using the Reservation rail mainline northward for several miles. This method of storage has the long-term disadvantage of blocking the mainline for other rail served industries or rail handling facilities that might be developed northward. Additionally, the storage of rail equipment for the purpose of maintenance and selective release back to owners would require more than single-track storage.

Such a storage facility could be sited within the Horn Rapids Rail Center, but that area might be better suited for industrial development because of its access to utilities. Adequate space would be available in the North Area just inside the Reservation. Rail storage track construction would be reasonably expensive, estimated up to \$500,000, as a coincidental service. This investment would not be justified without either a compelling demand for storage from the Class 1 railroads, or storage in conjunction with maintenance. The cost of the maintenance/storage option having to be absorbed by the maintenance business.

Development into rail equipment manufacturing and fabrication would require the expansion of Building 1171 and/or a new plant building adjacent to Building 1171. Such a facility would be similar to other development outlined in the industrial portion of the Phase II study. This development assumes that the demand would prompt private investment in the improvements. Public investment would be minimal, providing land for sale or long term lease at reasonable rates fully served by infrastructure. Additional public investment for specific purpose of supporting an anchor tenant such as LRC may be needed.

Another area of public investment appears to be in supporting rail technology and skills training. The magnitude and nature of public support is examined in more detail during Phase III as part of the coordinated development program. Currently, the continuing efforts of LRC in prompting and financially participating in the rail technology and skills training programs of Columbia Basin College represents an example of private-public cooperation in supporting economic development potential.

### ***Evaluation of Potential for Success***

This business candidate was originally suggested by the consultant team because a private firm was in place and pursuing growth using the most recently transferred Hanford Reservation assets. The market analysis identified modest but study growth potential for maintenance and a strong potential for manufacturing and fabrication of rail equipment.



Storage of equipment either in conjunction with maintenance, or primarily as storage services, may represent additional potential if new trackage is not deemed necessary. Existing repair and rehabilitation facilities are in use, and with some modest improvements, they could be ready for expanded use. There is no competing future use for these facilities and public investment needs are modest making inclusion of this effort into the coordinated program clearly justified. The Port must continue to work with LRC to reach mutually beneficial goals of growth that both fairly compensate the Port and provide attractive returns for private investment.

### ***Feasibility Summary***

A summary of the feasibility criteria developed in Phase I is:

- Reduce system costs? ---High quality and timely service, Yes.
- Improve system reliability? ---High quality and timely service, Yes.
- Reduce system inventory? ---High quality and timely service, Yes.
- Specific demand? ---Yes, but highly competitive business.
- Required land available and cost effective? ---Yes.
- Labor availability and cost effective? ---Yes
- Raw materials? ---N/A
- Required markets? ---Yes
- Transportation systems? ---Yes
- Business environment? ---Yes
- Water and utilities? ---Yes
- Quality of life? ---Yes
- Required returns on investment for industry? ---Yes
- Acceptable level of public investment? ---Yes

### ***Feasibility Conclusion***

This candidate was found to be feasible as both a transportation related and industrial development business.

## **4. Rail Equipment/Empty Container Center**

This business candidate is defined as an en-route facility for storing, staging and dispatching railroad double-stack rail cars and empty containers for the ports of Seattle and Tacoma.

### ***Demand/Marketplace***

The demand-evaluation for this candidate service was completed through consultation with HDR rail staff, railroad officials, and discussions with the Special Industry Focus Group. It is clear that there are important operating deficiencies at the seaports that could represent serious future limitations to rail operations. The potential limitations include timely availability of empty cars, and arrival and departure onto the mainlines as volume increases. Planned and current improvements at the ports such as additional near-dock rail storage and staging, special arrival and departure tracks, direct dispatch to mainlines, and optimized and coordinated operating procedures all will play a role in overcoming potential future limitations.

Currently, storage and staging of empty double-stack cars is not critical in the Pacific Northwest because of an overall shortage of cars nationwide and the preference given to supplying southern California. Seaport storage facilities are fully adequate for storing what have become just-in-time-inventories. As the shortage of rail cars is corrected in future years and volumes grow, west side storage is anticipated to be adequate for several years. In fact, the creation of additional storage area (already under development) at seaport and railroad storage facilities on the west side is expected to meet long-term requirements. Having the additional storage located on the west side is preferable given that the need to meet timely deliveries is more pressing than on the east side.

Although seaport operations are impacted by rail inefficiencies and their inability to attract intermodal container business, the supply and timely delivery of empty rail cars is an integral part of private railroad operations. The operational and business decisions being made by the railroads include many factors:

- Intermodal rail equipment is in short supply across the industry.
- Railroad owned equipment is rarely exchanged with other railroads because there is no incentive to return them.
- Railroad owned equipment is typically stored on railroad-owned sidings and storage tracks rather than using a 3<sup>rd</sup> party facility.
- Leased double stack cars (TTX) are typically exchanged with other railroads and are not candidates for planned staging.
- Long term storage of leased double stack cars (TTX) that are in poor repair use 3<sup>rd</sup> party facilities because of their age and limited use.
- Storage of other types of specialty cars is not done on the west coast.
- There currently is not a demand for third party storage in the Pacific Northwest.

Storage of empty containers at inland sites was not considered a port need for the future. In addition, container storage is probably a function internal to railroad operations and would not be requested from a third party. Limited space at the ports for storing empty containers for west bound shipments could become a long range problem, but the cost of double-handling of the boxes from off port storage will keep the containers stored at port facilities for most of the planning horizon. If space must be provided off port, sites closer than Central Washington will be most likely chosen. The operational and business decisions being made by the railroads include many factors:

- Empty container storage normally is required between Christmas and February of every year
- Empty container storage locations are in the mid-west at interchange points with other railroads and at railroad owned facilities
- Primary storage locations are Memphis, Chicago, St. Louis, Houston and Dallas/Ft. Worth
- Empty containers being stored in the mid-west are dispatched directly to a port for a specific ship arrival

### ***Development/Public Investment Requirements***

Access to the storage locations by both railroads would be mandatory; and switching operations for arriving and departing trains would be completed at reasonable cost. Development requirements would include a 40-acre site with 25,000 ft of storage track and 5,000 feet of intermodal trackage to support an empty container storage area. Such a facility could be sited within the Horn Rapids Rail Center by adding 20,000 feet of track to existing storage and 5000 feet of trackage for an existing lay-down facility west of the facility. This facility could also be sited north onto the Reservation focus area if rail is retained.

As with the export consolidation and domestic automobile distribution centers, experience of the seaport operators is that this type of multiuse facility would not be developed by the railroads even with reasonably high volumes and use. The railroads' avoidance of long-term risk and reluctance to become involved with large capital investments not directly involved with through-train operations would require that a public entity provide this entire facility as an investment. Operating costs and long-term risk of gaining a return on investment would be borne by the public. The estimated capital investment would be \$3,400,000. Jobs created would depend on volumes handled but would be estimated to be no more than 50 at full capacity. There would be relatively little opportunity for spin-off industry. Financial justification for this type of development would require a clear and compelling demand for the services and long-term commitment of users.

### ***Evaluation of Potential for Success***

This candidate was originally suggested by the consultant team based on known shortages in availability of empty double stack cars at the seaports and experience in staging cars inland for other areas of the country. Empty container storage needs of the railroads during certain times of the year was also known to exist on at least the BNSF Railway. Current demand has not been established and the trend for the immediate future appears to be increasing storage and staging by the seaports themselves and the railroads. Multiple locations tied to other drivers also appear to be standard for the railroads rather than any attempt to consolidate. Using available sidings and railroad-owned facilities is a strong railroad business incentive. It is not anticipated that a demand will be generated in a timeframe that would require it to be included in a coordinated development program. However, long range changes in the market place and implications of container movement strategies such as the "Agile Port" concepts, could make it worthwhile to retain this capability for when a clear and compelling demand is found.

### ***Feasibility Summary***

A summary of the feasibility criteria developed in Phase I follows:

- Reduce system costs? ---Likely to increase costs over current system.
- Improve system reliability? ---Yes, if part of a total logistics approach.
- Reduce system inventory? ---Change in location only.
- Specific demand? ---Not for immediate future or forecasted.
- Required land available and cost effective? ---Yes, significant public investment.
- Labor availability and cost effective? ---Yes
- Required markets? ---No

- Business environment? ---Yes
- Water and utilities? ---Yes
- Required returns on investment? ---Questionable and Risky
- Acceptable level of public investment? ---Moderate, Risky

Using the screening criteria of Technical Memorandum #2 for Freight Intermodal Service Center:

- One or more Class 1 Railroads and interstate highways? ---Yes
- Proximity to population center? ---No
- Or, proximity to a critical point of route geography? ---No
- Direct access to one or more Class 1 Railroad intermodal networks? ---No
- Site availability in proximity to Class 1 Railroad mainlines? ---Yes
- Clear and reasonable basis for assuming specific need? ---No
- Otherwise identified demand? ---No

### ***Feasibility Conclusion***

This candidate was not found to be a feasible option.

## **5. Rail Servicing Center Including National Strategic Trade Corridor**

Because of similarity of the two candidates, both were combined for the evaluation. A rail servicing center concept, being identical for both, is an en-route facility for providing rail operations, support services such as fueling, inspection, maintenance, repair, crew rest, crew changes, dispatch arrival/departure trackage and temporary train storage and staging.

### ***Demand/Marketplace***

The demand-evaluation for this candidate was completed by interviewing expert HDR rail staff, railroad officials and discussions with the Special Industry Focus Group. Drivers for establishing rail service centers are that the site should be immediately adjacent to a rail mainline, and at a point in the rail network that geographically allows consolidation of several servicing operations. Service centers are usually developed, controlled and operated by railroads. Current demand for these types of services is filled by facilities in Haver, MT, and Ballard, WA for the BNSF, and in Hinkel, OR for the UP. Pasco represents a crew change location but service takes place at many more locations than typical consolidated service centers.

New facilities for the railroads are the result of long term planning and meeting of special needs. For example, at Hauser, ID, a newly proposed facility for the BNSF is driven by the need to move further west than their current Haver, MT, fueling site in order to eliminate Ballard, WA in their Pacific Northwest loop. The Special Industry Focus Group was aware of the fueling location proposal at Hauser, ID and noted it as being illustrative of siting of such facilities primarily for meeting rail operations needs. None of the group was familiar with the National Trade Corridor program nor could they see a direct relationship of domestic cargo flow routes and growing local cargo-producing businesses. It could be that increasing volumes flowing through the area might create new rail and highway servicing demands.

Opinion from the group is that this is not a candidate that would be viable in a long-range program.

### ***Development/Public Investment Requirements***

The siting of this type of facility requires the availability of adequate land immediately adjacent to the intermodal network mainline of the BNSF or UP; preferably a multi-use site for both railroads. Depending upon the number of services provided, the acreage requirement could vary from as little as 20 acres for “gas and go” refueling operations to 100 acres for en-route storage, staging, inspection and minor repairs. Since development of these types of facilities are predominantly by the railroads, any single-line service would be developed by that railroad and required public investment would be limited only to possible provision of land or other economic incentives. A multi-use facility would require substantial public investment and risk. There is no demand for this service in the immediate future and it is not anticipated that a demand will be generated in a timeframe that would require it to be included in a coordinated development program.

### ***Evaluation of Potential for Success***

This candidate service was originally suggested by the consultant team based on a need to search out opportunities for the use of Hanford or other Tri-Cities lands falling short of attracting major industrial business or large intermodal operations. The en-route servicing of trains or trucks is a general requirement for the flow of freight along regularly traveled routes. For purposes of this study, it has been determined that such services opportunities will only be coincidental to future growth patterns of transportation and that there is little chance that they represent long range development potential within a coordinated program.

### ***Feasibility Summary***

A summary of the feasibility criteria developed in Phase I:

- Reduce system costs? ---No, location is wrong.
- Improve system reliability? ---No, location is wrong.
- Reduce system inventory? ---Not applicable.
- Specific demand? ---No.
- Required land available and cost effective? ---No, not on mainline.
- Labor availability and cost effective? ---Yes
- Required markets? ---No
- Business environment? ---Yes
- Water and utilities? ---Yes
- Required returns on investment? ---Questionable and risky
- Acceptable level of public investment? ---Moderate, risky

### ***Feasibility Conclusion***

This candidate was not found to be a feasible option.

## **6. Transportation Equipment Control and Tracking Center**

This service is defined as a center that would provide transportation equipment location and control services for a wide spectrum of transportation modes to include trucking, rail, air, barge and ship.

### ***Demand/Marketplace***

This candidate use was originally conceived as a specific opportunity for use of Building 1163, which was recently transferred to the Port. A precise description of the concept was not found during the evaluation. The Special Industry Focus Group was not aware of any initiative to consolidate cargo or equipment tracking nor a particular demand for such services. Some had heard of one or more trucking firms that had installed transponders for GPS tracking of their equipment but were not aware of a demand for centralized or wide-coverage of such services. All were aware of the many proprietary cargo tracking systems operated by the shipping lines as a service for their shippers and some systems operated by seaports specifically for their customers not otherwise served. These are primarily data base inventory systems, but can use bar codes or transponders on trucks and rail cars for geographic location. It's important to note, though, that all of those systems are driven by the demand of large volumes being handled by the entity rather than a service business.

### ***Evaluation of Potential for Success***

It was determined during the Phase II evaluation that this candidate related more to immediate recruiting efforts of the Port for a given building and did not adapt to a need for inclusion in long range planning.

### ***Feasibility Conclusion***

This candidate was found to not be feasible as an element of the coordinated program.

## **CONTINUING EVALUATION OF STRATEGIC TRANSPORTATION ISSUES**

The original scope of this study recognized that:

“Existing transportation networks and new strategic transportation opportunities, (either brought about by the project e.g., new rail route opportunities, or found to support/enhance the project) ...will be a large part of the study.”

It also stated that:

“The synergy found to exist between development of transfer lands and facilities, transportation networks and new transportation opportunities, ...becomes an important aspect of determining the project's over-all feasibility.”

Integration of transportation assets of the region into overall development opportunities does not always occur in a direct and, as proven in Phases I & II of the study. It has been somewhat like the chicken and egg question; e.g.:

Will transportation assets and potential growth of those assets drive development and business growth? ---or

Will development and business growth take place, driven by other factors, as long as industrial transportation demands can be met?

Results of the Phase II evaluation confirmed that industrial development was not driven by transportation assets and found little, if any, evidence to support a significant business of transportation demand. Eight categories of industrial development were found feasible but none included a significant requirement for rail or highway.

However, as Phase II evaluation of the business of transportation progressed and the above realities began to emerge, it was found that two concepts -- East-West Rail Improvements, and Operational Support for Washington Seaports -- could not be adequately addressed merely as business opportunities relating to Hanford development. As an example, at least one basic concept of East-Route Rail Route Improvements included the use of portions of the 124-mile Reservation Railroad as a new mainline route for the BNSF from Ellensburg to Pasco. Another example is the long-range concept of “Agile Port,” an inland container handling site. It is too early in the planning process to determine its applicability to the Pacific Northwest or to determine whether a siting in south central Washington would be possible. These strategic issues need to be addressed more broadly and over a longer planning horizon than 20 years.

Accordingly, the two topics, East-West Rail Route Improvements and Inland Operational Support for Washington Seaports, have strategic implications for the region and the state, and are fully evaluated in Phase III. A special interim report, “Strategic Transportation Issues”, will be produced as part of the Phase III completion package.

#### **WORK-IN-PROGRESS – INTERIM FINDINGS: STRATEGIC TRANSPORTATION ISSUES**

The Port of Benton’s “Alliance Washington, Vision 2050” is a planning concept for growth on the Hanford Reservation and within the Tri-Cities area. The plan has played an essential role in recent transfers of Hanford lands and facilities that include the 9-mile rail segment connecting to Burlington Northern Santa Fe and Union Pacific railroad mainlines. The plan was also important in prompting the funding of this study by the state and Port. This comprehensive vision recognizes the need to define shorter-term development and advocates preservation of long-term opportunities.

Noteworthy is that the Port’s vision (as expressed in its plan) has been heavily focused on the great value provided by the unique location of the Hanford properties and facilities in relation to the state’s transportation network and the 124-mile Hanford Reservation Railroad. The Port and others supporting this vision also recognized that the combination of existing land, facilities, highway, and rail access constitutes the overall opportunity, but have retained a focus on transportation as the vital element. Supporters also expressed a belief that the Reservation rail system and the opportunity to develop a mainline route through the

Reservation could be the principal drivers of development. A significant amount of this growth is attributed to demand for transportation services, including that created by Washington seaports.

Using a planning horizon of 20 years, a relatively modest transportation-demand was found for industries predicted to locate on the Hanford Reservation. That is to say, *adequate* transportation capacity was a requirement for attracting these businesses. But providing large-scale multimodal transportation systems was not required nor would large-scale systems attract additional business. This same conclusion was reached by an industry focus group representing Washington seaports, shipping lines, trucking lines, and railroads, which met during Phase II.

But that does not mean that strategic transportation issues of capacity-driven East-West Rail Route Improvements and potential Inland Operational Support of Washington Seaports are not applicable to the basic question of State and/or Port interests.

### **EAST-WEST RAIL ROUTE IMPROVEMENTS**

These improvements would provide additional rail capacity, shortened routes, relief to grade crossing issues, bypassing of rail congestion areas, improved and new access to regional centers, and space for transportation servicing facilities.

Three specific long-term rail needs and benefits have been identified thus far in the evaluation of strategic issues:

#### **Reopening Ellensburg to Lind Rail Route**

This option would be to reopen approximately 100 miles of track from Lind to Ellensburg. This would create a mainline that would bypass Yakima and the Tri-Cities and provide a direct connection from Spokane to the Seattle metropolitan area without the southern swing of the current route through the Tri-Cities. Benefits are seen as:

- Increased capacity from Ellensburg to Spokane
- Decreased operating costs from Ellensburg to Spokane
- Reduced grade crossing impacts through the Yakima Valley and the Tri-Cities

#### **Stampede Tunnel Improvements and Use of a One-Way Loop System**

The Stampede Tunnel improvements would allow accommodation of double-stack trains. Using a one-way loop system between Spokane and the Puget Sound, westbound over Stevens Pass and eastbound over Stampede Pass, provides a potential capacity improvement for all east-west movements. Benefits of this improvement include:

- Increased capacity statewide
- Decreased operating costs statewide
- Reduced grade crossing impacts through Yakima Valley and the Tri-Cities



### **Reopening Ellensburg to West Beverly to Northern Terminus of Hanford Reservation Rail and North Richland Hanford Reservation Rail to Pasco Yard**

Under this option, the old line would be re-opened only to west Beverly, as opposed to Lind. The old Milwaukee trackage along the Columbia River would then be reopened for approximately 30 miles from west Beverly southeast through the Hanford Reservation, connecting the existing Hanford Rail to the Tri-Cities from Stampede Pass and Ellensburg. Connection to the Pasco Yard would then be made from Hanford via a new Columbia River rail bridge in the vicinity of North Richland. Benefits for this improvement include a reduction in the number of grade crossing impacts through Yakima Valley and the Tri-Cities.

Note that reopening part of the Ellensburg to Lind Route and connection to Reservation rail, the last option, is driven only by a potential need to relieve grade crossing impacts on the current route. This limited value is the result of several factors of railroad intermodal network systems:

- Access to through-intermodal trains is restricted to “nodes” that represent hubs on a hub and spoke system. Nodes are rare on the BNSF system with only six between Chicago and the Washington coast. The Hanford site would have only indirect rail access to the node at Spokane even if the mainline were to traverse the Reservation.
- Switching access to a mainline is fully adequate for high volumes seeking through-train service, as it is available for an off-hub area. Hanford sites will have switching access with or without the mainline traversing the Reservation.
- High rail demand has not been found for potential development, certainly not at a level that would gain the interest of the railroad in establishing a node for the Hanford area nor for the Tri-Cities in general. Mainline routing across the Reservation would not drive development.

However, evaluations of the East-West Rail improvements are still underway. Factors relating to this regional rail system that will be addressed include all or most of the following:

- Identification of additional areas of rail route needs with strategic implications related to south central Washington
- Establishment of planning-level, long range system demand
- Determination of railroad, state and/or regional interests
- Identification of planning-level costs, obstacles and timelines
- Evaluation of competing needs and interests
- Conclusion of long-range demand for rail and broad feasibility
- Determination of current and future actions needed

### **INLAND OPERATIONAL SUPPORT TO WASHINGTON SEAPORTS**

This concept would provide storage, staging and distribution facilities in direct support of Washington seaports of Seattle and Tacoma. The support center would have components of a

Freight Intermodal Service Center operation. Long-term needs of the two primary Washington seaports, Tacoma and Seattle, for possible inland operational support evolve around the following future challenges:

### **Larger Ships/Higher Import Container Volumes**

Forecasts through 2020 for the west coast indicate continuing growth of Asian import container volumes for intermodal rail movements to the entire U.S. through five primary and two secondary ports (Los Angeles, Long Beach, Oakland, Tacoma, Seattle, and Portland and Vancouver, BC). Volumes are forecast to grow by a factor of 200% to 300% depending upon the port's ability to maintain market share. At least some of the largest primary ports will have to accommodate container ships that are 2 to 2.5 times larger than they are today.

### **Terminal Space Limitations**

As a general premise, the ports that will be able to accommodate the largest future container ships and successfully move the mass of container volumes intermodally to inland destinations will need increases in their limited waterside terminal space which will prove difficult to accomplish.

### **Terminal Rail Capacity Limitations**

Similar to the general premise for terminal space, ports will need to increase their limited capacity to load and dispatch intermodal trains which could be difficult to accomplish.

### **Highway Capacity Limitations**

A high percentage of import container volumes forecast for Washington growth is destined for intermodal movements inland by rail to the midwest and east coast. However, overall increased volumes will result in regional trucking increases and continue to challenge west side highway systems and passes over the Cascades.

The potential needs for long-range solutions are what have driven the Port of Benton's vision that an inland operation using Hanford assets should be considered as a solution. The study team and the special industry focus group have attempted to identify influential transportation issues over a practical 20-year planning horizon. General observations regarding current and future trends in domestic container transport are that the largest ships and volumes will continue to favor southern California

The Pacific Northwest will of course aspire to an increasing market share of intermodal import containers and will grow even at their current share. But there is no indication that the current favoring of southern California ports for the biggest ships and largest regional and intermodal volumes will change. Regional population and proximity to sunbelt populations nationwide as well as highly competitive rail connections will continue to drive that market to southern California. Southern California is expected to retain this advantage even with a Pacific Northwest ability to compete as to price and service level. The Pacific Northwest will need to focus on holding market share rather than the unlikely chance to grow at southern California's expense. Accordingly, the greatest challenges of larger ships and volumes those are the topic of such planning concepts as "Agile Port" for the long-term future are more likely to be for areas other than Tacoma and Seattle, at least for the next 10 to 20 years.

Even though southern California is a more likely candidate for needing a deliberate system for overcoming massive volumes, the Pacific Northwest will see significant growth that will continue to challenge its intermodal and regional container operations. However, the challenges are anticipated to be manageable:

- Terminal space limitations may not materialize.

Based upon the biannual cargo forecast completed by the Washington Public Ports Association and WSDOT, the 20-year container growth forecast for the Puget Sound rises from approximately 2,800,000 twenty foot equivalent units (teu's) this year to 5,000,000 teu's in 2020. Potentially increasing productivity per acre of terminal space can be expected from improved container handling and storage systems and improved rail operations. This factor along with existing over capacities of some terminals and some potential for new terminal sites provides a good chance of meeting space demands for the 20-year period.

- Rail capacity limitations may be overcome.

Rail capacity issues are basically parallel for both ports, challenges of timely loading and clearing of containers from the primary shipping terminals and facilitating timely inland deliveries by rail. Tacoma is exclusively operating on-dock rail terminals and Seattle will be accommodating such an operation in the near future. Key operating deficiencies that could represent serious future limitations to rail operations include timely availability of empty cars, timely clearing of loaded trains from on-dock rail yards, timely clearing of arriving trains from mainlines and timely dispatch of loaded trains. The actual loading process is not considered a key challenge for future volume increases, if the other deficiencies can be overcome. Improvements underway and planned at the ports such as additional near-dock rail storage and staging, special arrival and departure tracks, direct dispatch to mainlines, and coordinated operating procedures all will play a role in overcoming potential future limitations.

- “Agile Port” Concept and facility siting and demand are yet to be determined

The need for an inland supporting operation is primarily the product of this operations concept that focuses on the assumed future need to move massive amounts of import containers away from otherwise totally overwhelmed port terminals. Currently, the ports of Long Beach and Los Angeles, for which the concept was originally developed, have not embraced the concept as an accepted solution. The special industry focus group for this study concluded that an inland site would not be required for Tacoma and Seattle for at least the next 10 to 20 years, if ever. Further, if this need were identified in the long-term, central Washington would be too far inland a location to make it practical. However, the uncertainties surrounding “Agile Port” and inland support could provide a long-term justification for retaining certain non-investment or reasonably small investment options for meeting a yet to be determined inland support need.

## **ATTACHMENT A: FOCUS GROUP MEETING SUMMARY**

## **SPECIAL TRANSPORTATION INDUSTRY FOCUS GROUP**

An important component of the Phase II study was obtaining input from persons knowledgeable of the business of transportation industry. Review and comment on transportation candidates was regularly provided by the Stakeholder Advisory Committee during the Phase I & II processes. In addition, a Focus Group consisting of a cross-section of representatives provided specialized input and discussion during a half-day workshop. Individuals volunteering their travel and time to participate were:

Paul Chilcote – Senior Director, Planning & Development, Port of Tacoma  
Craig Hautamaki – Senior Program Manager, Port of Seattle  
Howard Granger – Senior Representative, Eastern WA, Port of Seattle  
Steve Kuzma – Manager, Industrial Development, Pacific Region, BNSF  
Peter Bennett – Pacific Northwest Manager, K-Line America  
E.J. Zeleny – Marketing Director, American Container Transport, Inc.  
Alan Harger – Manager, Freight & Economic Partnerships, WSDOT  
Peter Beaulieu – Freight Mobility/Corridor Strategies, Puget Sound Regional Council

HDR personnel attending to lead the discussion and act as an information resource:

John J. Terpstra – Project Manager and National Director, Ports  
Wayne Short – Rail Section Manager and Rail Planner  
Kurt Reichelt – Senior Rail Engineer and Rail Planner  
John Villager – Highway Section Manager and Transportation Planner

The Focus Group was provided copies of the Phase I Business of Transportation Screening report in advance. At the workshop, brief descriptions of the seven business of transportation candidates were presented for their consideration and discussion. Additionally, the two strategic issues were presented. The Focus Group asked that only a single consensus opinion of the group be considered in the study. Their consensus conclusions concerning the seven candidates businesses and the two strategic transportation issues were:

### **Export Consolidation Center**

The group thought this was a viable concept for relieving highway congestion, space efficiency at the ports, and possibly overload issues. However, this option is dependent upon the railroad's long range interest in relatively short-haul segments and providing timely and cost-competitive service. This would not take place just because a facility for consolidation was developed in central Washington. Conclusion was that chances of success over a 20 year planning horizon were very low.

### **Domestic Auto Distribution Center**

The group was not that familiar with the domestic distribution requirements of U.S. automakers but understood the principle being applied hub and spoke with a single hub

for PNW. The overall conclusion was that success would be totally dependent upon establishing a clear need and demand. This demand was unknown at the time of the session.

### **Rail Equipment Repair and Rehabilitation**

The group was impressed with the headway the current site tenant, LRC, is making. They also expressed a positive reaction to supporting expansion of LRC business services. Since the business candidate is a railroad specialty business, it was difficult for the group to be more definitive. They felt that this may be more of an existing business development issue rather than a long range planning issue unless a clear demand can be established for centralized services such as this for the Pacific Northwest.

### **Rail Equipment and Empty Container Center**

The ports' need for timely availability of empty doublestack cars was confirmed as critical to their intermodal operations. On-terminal and near terminal storage and staging facilities are being built for the seaports. The railroads are also staging cars as close as possible to the ports, generally meeting needs for the immediate future. It could be possible that over the long term, storage further inland at several sites would allow shuttling closer to the ports to meet peak-requirements. The conclusion was that such facilities should never be considered for development without a clear demand for the services.

Empty container storage at inland sites was not considered a future port need and for the future and storage is usually handled by the railroads. Space at the ports for storing empty containers for westbound shipments could become a long-range problem. However, the cost of double-handling the boxes from off port storage, will ensure that off-port handling will be a final option. Once off-port space is required, sites closer than central Washington will be most likely chosen.

### **Cargo Equipment Tracking Center**

The group was unaware of any initiative to consolidate cargo or equipment tracking nor a particular demand for such services. Some had heard of one or more trucking firms that had installed transponders for GPS tracking of their equipment but were not aware of a demand for centralized or wide-coverage of such services. All were aware of the many proprietary cargo tracking systems operated by the shipping lines as a service for their shippers and some systems operated by seaports specifically for their customers not otherwise served. These are primarily database inventory systems but can use bar codes or transponders on trucks and rail cars for geographic location. But all of those systems are driven by the demand of large volumes being handled by the entity rather than a service business.

### **Rail Serving Center and Rail Servicing Center/ Trade Corridor Status**

These two candidates were considered by the group to be siting and operations issues of the railroads. They were aware of the fueling location proposal at Hauser, Idaho and noted that siting of such facilities are primarily only for rail operations needs. None of the group was familiar with the National Trade Corridor program nor could they see a

direct relationship of domestic cargo flow routes and growing local cargo-producing businesses. It could be that increasing volumes through the area might create new rail and highway servicing demands. There was general consensus that this candidate is not essential in a long range program.

### **Strategic Issue – East/West Rail Route Improvements**

There was general consensus with the group that this issue will become extremely important to retaining Washington's long-term competitive stance against southern California in the intermodal container business. Capacity for intermodal through-trains is a key component. There appears to be adequate capacity today, however the rail system has specific choke points that will continue to grow over the 20 year planning horizon. Stampede pass has provided some relief to the overtaxed Tacoma to Portland common BNSF/UP line but Stevens Pass route still limits numbers of eastbound doublestack trains for the BNSF.

The group was very knowledgeable of the Ellensburg – Lind reopening potential and the estimated costs and service improvements were reviewed. Their conclusions concerning this segment were that it has little chance of being cost-justified anytime in the immediate future as the BNSF's use of the current Stampede pass route meets their needs and still has capacity available.

The issue of future container train capacity was addressed with a suggested scheme for the future. It consisted of opening Stampede Pass to doublestack traffic and use of a one way loop, westbound over Stevens Pass and eastbound over Stampede. The group was in agreement with this as a long-range strategy that needs further evaluation. The Ellensburg – Lind line represents an important part of that scheme as a time and operating cost savings for the overall system when needed. The group felt that the state needs to retain the ability to move forth with reopening of Ellensburg – Lind over the long term to support a high capacity system.

The vision of the Port of Benton to connect the Hanford Reservation line to the Ellensburg – Lind route, or Ellensburg – West Beverly segment was reviewed. This included the idea the connection being an alternative to building numerous grade separations in the Yakima Valley and Kennewick. The group could not identify any reason for making such a connection other than the bypassing of Yakima Valley and Kennewick. They felt that the presence of a mainline route through the Reservation was not likely to attract transportation-driven development as envisioned because the site already has reasonable access to the BNSF and UP at Kennewick. And it was noted that rerouting on the Ellensburg – Lind segment as far as West Beverly and then turning south across the Reservation to only end up again at Pasco was not the best reroute alternative. Going on to Lind was a better solution for ultimately getting intermodal through-trains to Spokane.

## **Strategic Issue – Inland Operational Support for Washington Seaports**

The group was in agreement that timely loading and clearing of containers from the primary shipping terminals and facilitating timely inland deliveries by rail could be key operating deficiencies for the future. Future rail operations will need timely availability of empty cars, timely clearing of loaded trains from on-dock rail yards, timely clearing of arriving trains from mainlines and timely dispatch of loaded trains. The actual loading process is not considered a key challenge for future volume increases, if the other deficiencies can be overcome. Improvements underway and planned at the ports such as additional near-dock rail storage and staging, special arrival and departure tracks, direct dispatch to mainlines, and coordinated operating procedures all will play a role in overcoming potential future limitations.

The need for an inland supporting operation is primarily the product of a concept of operation known as “Agile Port” that focuses on the assumed future need to move massive amounts of import containers away from otherwise totally overwhelmed port terminals. Currently the Ports of Long Beach and Los Angeles, for which the concept was originally developed, have not embraced the concept as an accepted solution and the focus group concluded that an inland site would not be required for Tacoma and Seattle for at least the next 10 to 20 years, if ever. And if this need were identified in the long-term, central Washington would be too far inland. However, the uncertainties surrounding “Agile Port” and inland support could provide a long-term justification for retaining certain non-investment or reasonably small investment options for meeting a yet to be determined inland support need.



**ATTACHMENT B: MARKET DEMAND ANALYSIS:  
CONSOLIDATION AND SHIPMENT CENTER**

## **MARKET DEMAND ANALYSIS: CONSOLIDATION AND SHIPMENT CENTER**

**Prepared By: BST Associates**

One of the concepts under consideration as a potential re-use of the Hanford site is that of creating a intermodal export load center for export cargoes produced in Eastern Washington and Eastern Oregon. Products of the region that were studied in detail include:

- Hay
- Apples
- Potatoes
- Beef
- Forest Products

These products represent the largest portion of export containers in the area of study. Details for each commodity are presented below.

### **1.1 PRODUCTION LOCATION**

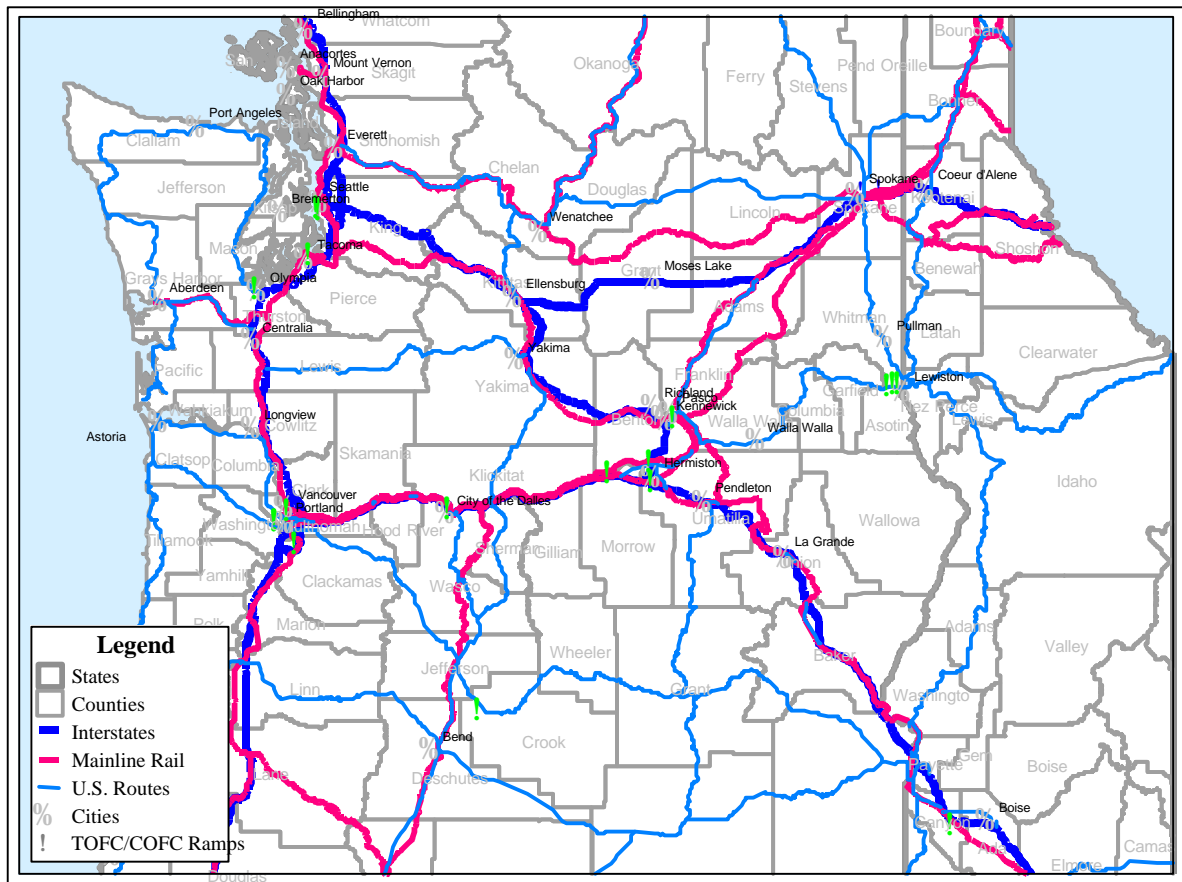
Because the geography of Eastern Washington is so varied, each of the commodities studied in this analysis tends to be produced in one or two specific regions and not in the other. For example, apples that are exported and primarily grown in the Wenatchee area and the Yakima Valley, although there are orchards in other counties as well. These other counties are not yet major exporters, however. Table 1 lists the center of production for each of the commodities covered in this analysis.

**Table 1 – General Location of Production of Eastern Washington Agricultural Exports**

<b>Location</b>	<b>Hay</b>	<b>Apples</b>	<b>Beef</b>	<b>Potatoes</b>	<b>Forest Products</b>
Ellensburg	X	-	-	-	-
Tri-Cities	X	X	X	X	X
Yakima	-	X	-	-	-
Wenatchee	-	X	-	-	-
Toppenish	-	-	X	-	-
Moses Lake	-	-	-	X	-
Lewiston	-	-	-	-	X
Walla	-	-	-	-	X

The concept of gathering export cargo in a single location for transport to the port of export has merit. As shown in Figure 1, the concept has already been applied in this region, with no fewer than four intermodal facilities located in the vicinity of the Tri-Cities and Boardman. A new export load center located on the Hanford site would need to offer substantial transportation cost saving over the existing facilities in order to generate new traffic.

**Figure 1 – Location of Intermodal Facilities in the Pacific Northwest**



As presented above, five of the highest-volume products exported from Eastern Washington include hay, apples, potatoes, beef, and forest products. Trends in the production and export of each of these is examined below, along with an analysis of the potential increased or decreased costs associated with exporting via Hanford.

### 1.1.1 Hay

Animal Feed is the highest-volume containerized commodity exported through Tacoma and Seattle. Hay is shipped overseas in containers in two different forms: cubes and bales. Bales are very compressed versions of the bales typically seen in the field, while hay cubes are processed into a sort of pellet approximately one inch long.

The center for hay production in Washington is Kittitas County and Grant County. Although the largest volumes of hay are grown in these two counties, there is also substantial production in most of the counties located south of Kittitas and Grant Counties.

In regard to transportation, though, the most important factor is the location of processing facilities. These facilities include both compressing stations and hay cube plants. Currently, the largest number of compression facilities is located in and around

Ellensburg. There are also a substantial number in and around Moses Lake. The only hay cube processing plant is located adjacent to the Port of Pasco. In addition, south of the Columbia River, in the vicinity of Boardman, there are also compressors.

#### 1.1.2 Apples

The largest number of apple packing houses in Washington state have traditionally been located in Wenatchee and Yakima. The areas surrounding these two towns have been the location of orchards for decades.

There is currently a trend emerging, however, of new large orchards being planted in less traditional areas, such as the lower part of the Yakima Valley and further south toward the Tri-Cities. These new areas are still quite small in comparison, though.

According to the local traffic association, production in Washington is divided fairly evenly between the Yakima District and the Wenatchee District, as shown in Table 2.

**Table 2 – Apple Exports by District (millions of 42-lb boxes)**

Crop Year	Yakima	Wenatchee
1996	15.2	18.0
1997	11.0	11.0
1998	14.7	15.4

#### 1.1.3 Potatoes

Potatoes are an increasingly important crop in Eastern Washington, and a large percent of these are exported as value-added products such as french fries. Potatoes are especially important in Grant County, but the entire region from Moses Lake south to Umatilla produces huge volumes of potatoes.

To process these potatoes the three major processors have established a number of plants in Moses Lake, Pasco, Umatilla, and other nearby sites. The largest processors of potatoes in the Pacific Northwest are Simplot, Ore-Ida, and Lamb-Weston. Simplot and Ore-Ida are both headquartered in Boise, Idaho, but Ore-Ida has facilities in Oregon, as well as Idaho, and Simplot processes potatoes at its plant in Moses Lake. Lamb-Weston operates potato processing plants in Moses Lake and Kennewick.

#### 1.1.4 Beef

There are three main processors of beef in Washington state, two east of the mountains and one west. The two largest processors are Iowa Beef Packers (IBP) and Washington Beef. IBP is a national company with plants located throughout the U.S., including the one near Pasco. Washington Beef is as much smaller firm overall but has a large beef processing operation in Toppenish.

### 1.1.5 Forest Products

#### *Logs & Lumber*

Very few logs for export are being cut in the hinterlands for an export load center at the Port of Benton. Likewise, there is not much lumber production in that region.

#### *Plywood & Veneer*

Plywood and veneer exports from the Pacific Northwest dropped dramatically over the past two decades as lower-cost producers in the U.S. Gulf Coast states captured the European market, and 108 out of 187 mills in the Pacific Northwest closed permanently. Now the majority of Oregon and Washington panel exports are shipped across the Pacific to Asian destinations.

There are smaller wood manufacturers located in the area such as in Moxee and Walla Walla. However, these are generally producing higher-value lower-volume goods such as millwork and door trim. There are no large dimensional lumber or panel products mills in the area.

#### *Pulp & Paper*

Pulp and paper are only produced at a few locations in Eastern Washington, including Wenatchee, Wallula, Spokane and Usk. Of these, only Wallula is considered to potentially be within the hinterland for the Port of Benton. In addition, the Potlatch mill at Lewiston, Idaho may represent an opportunity.

The mill at Wallula is owned and operated by Boise Cascade. This is a major facility that includes both pulp and paper production. Wallula is located both on the Columbia River, downstream of the Tri-Cities, and on a Burlington Northern rail line. Lewiston also provides both rail and water access, both of which are utilized by Potlatch.

## **1.2 Current Method of Transport**

### 1.2.1 Hay

Most hay is currently moved from processing facilities to Seattle and Tacoma via truck, or by barge from Pasco to Portland.

It is unlikely that hay would be shipped from the Hanford site, for a number of reasons. The first of these is that hay is a just-in-time product that is containerized immediately prior to being trucked to port for export. The extra time that containerized hay would spend sitting in a container yard waiting for a full train to be assembled would mean the loss of business for exporters.

Another reason that hay exports are unlikely is that a large share of the processing is now done in Ellensburg and Moses Lake. From these two cities it would not be efficient to

ship the containers back to Hanford for export. There is also a hay cube facility at the Port of Pasco, but this facility is oriented to export by barge. In addition to these there are processors located around Umatilla and Boardman, Oregon, but these facilities are also oriented to truck and barge transport.

### 1.2.2 Apples

Apples are stored in packing houses until they are removed for shipment to domestic or overseas customers. These packing houses are concentrated in two geographic locations: Wenatchee and Yakima. All of the apples moving to port for export are shipped by truck.

Fruit is exported in both breakbulk and containerized form, but containers now account for the majority of exports and their share is increasing. An estimated 95% of the apples exported from Puget Sound ports is grown in Washington, although there is occasionally some fruit from Oregon and British Columbia exported through Seattle and Tacoma.

For fruit grown in the Wenatchee region, there would be no benefit to using an export load center at Hanford because the trucking distance to Hanford is only slightly less than that to the Port of Seattle. For most of the fruit grown in the Yakima region there would also be little benefit to such a facility. However, for the very southern parts of the Yakima region there might be some orchards or packing houses located close enough to the site that they could benefit, depending on the frequency and price of service.

### 1.2.3 Potatoes

Most of the exports of frozen potatoes from Idaho and Oregon are shipped to Portland by truck, or barged from Boardman and Pasco to Portland. Frozen potatoes from the Kennewick plant are barged Portland. Potatoes processed in the Moses Lake plants are trucked to Seattle and Tacoma for export.

It is unlikely that an export facility at Hanford would capture any of the Moses Lake potatoes or those processed in Oregon. The most likely market would be those produced in the Tri-Cities, but those are already being handled by the Port of Pasco and by other facilities. Success in attracting these shippers would be based on price and frequency (discussed below).

### 1.2.4 Beef

Most beef exported from eastern Washington is now trucked to port, although the Port of Pasco is handling some volumes through its container facility. For the IBP plant, located near Pasco, barging provides a low-cost transportation option, and the Port of Pasco currently provides that option.

For the Washington Beef plant, located in Toppenish, 100 truck miles could be saved by exporting via Hanford rather than trucking all the way to Tacoma or Seattle. However, for this to make sense the rail cost would need to be substantially lower than the trucking

cost in order to make up for extra handling, inventory carrying costs, and the additional rail transportation cost. It is not likely that this moves makes sense.

### 1.2.5 Forest Products

Forest products which are manufactured within a reasonable distance of an intermodal facility at the Hanford site are currently being shipped by both truck and barge. In addition, forest products produced at Lewiston are transported to the port of export by rail or barge.

Because of the geographic location of the plants, and because barge transport is the least expensive mode of transportation, it is very unlikely that any forest products would shift from barge to rail via Hanford.

For forest products now being shipped by truck the discussion on trucking beef hold true here, as well. The savings from the rail cost would need to be substantially lower than the trucking cost in order to make up for extra handling, inventory carrying costs, and the additional rail transportation cost. It is not likely that this moves makes sense.

## 1.3 Relative Transportation Costs (\$/Ton-Mile)

Using a number of different sources, including the Surface Transportation Board, American Trucking Association, and Port of Portland, among others, the transportation cost for various modes was calculated. The rates in Table 3 below represent a blended rate for goods shipped between the Tri-Cities area and the ports of Seattle, Tacoma and Portland. The units for this table is \$/ton-mile, which is the cost to move one ton of freight one mile, and is a standard method for comparing modes.

As shown, trucking is the most expensive method for shipping eastern Washington farm goods to port. Barge is the least costly, and rail is in the middle. Relative to trucking, barge transport is 42% cheaper on a ton-mile basis, and rail transport is 27% cheaper.

These figures only represent the transportation cost. They do not include other charges, such as those for loading and unloading barges or rail cars. It is also important to note that these figures are representative of an optimized situation. For example, the rail rates are based on the movement of garbage from Seattle, which is a closed system in which 100 containers (200 TEU) per day are shipped six days per week and 52 weeks per year, or an annual total of 62,000 TEU. With less service rates would go up.

**Table 3 – Estimated Transportation Cost by Method**

Mode	\$/ton-mile
Barge	\$0.061
Rail	\$0.077
Truck	\$0.106

Currently very little of Eastern Washington's agricultural products are being shipped to port by rail. Table 4 shows the estimated number of twenty-foot equivalent units (TEU) of goods shipped from this area to port. These estimates were produced by calculating the tonnage exported from Eastern Washington and dividing that by the average weight per TEU for each of the different commodities. These TEU figures do not imply that all of the products are currently being shipped by container. Rather, they provide a convenient unit for comparing modes.

As shown in Table 4, nearly all of the Eastern Washington exports are currently moving via truck. There are some potatoes and forest products moving via barge, but a very small share of the hay and beef and none of the apples move by barge.

In order for an export load center at the Port of Benton to be able to offer competitive rates it would need to attract more than one-third of the cargo currently moving via truck and barge from Eastern Washington (based on the example of garbage shipped from Seattle).

As shown in Table 4 below, there is an estimated total of 163,000 TEU of goods shipped out of Eastern Washington now, and the export load center would need 63,000 of those TEU. However, as discussed previously, few of the apples and only a small volume of hay are likely to use such a facility, which leaves a remainder of only 60,000 TEU of other commodities.

In order to reach the desired volume, the export center would need to capture all of the beef, potatoes and forest products. This is unlikely, for two reasons. The first is that, as discussed earlier, some of these products are geographically more suited to transport via truck. The second is that some of this cargo is already moving by barge, which offers lower rates than rail. In addition, it is possible that more of this cargo will be moving to barge in the future.

**Table 4 – Estimated TEU's by Mode of Shipment**

Mode	Hay	Apples	Beef	Potatoes	Forest Products	Total	Share
Truck	51,958	52,677	6,697	39,993	4,162	155,487	94.9%
Barge	4,793	-	-	1,261	2,370	8,424	5.1%

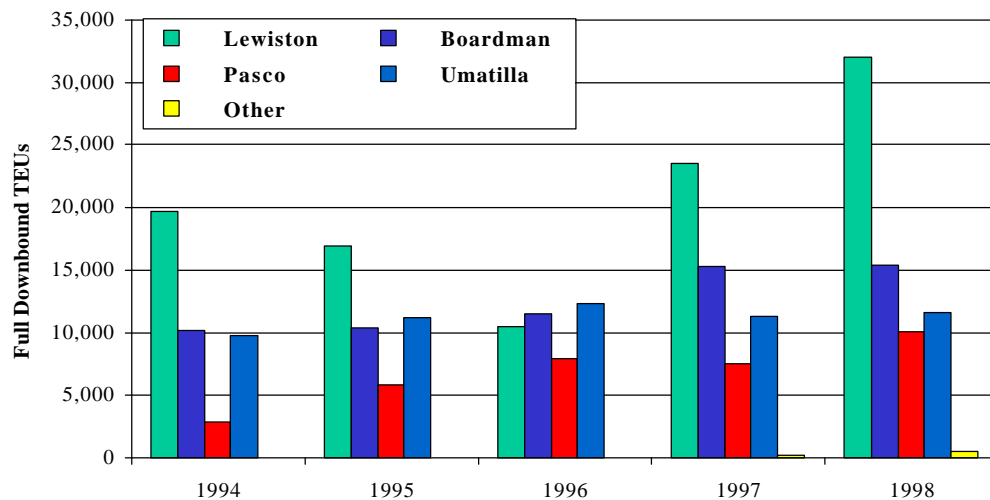
Source: BST Associates

Figure 2 illustrates the growth in barged container traffic. It is interesting to note that even during the Asian economic crisis of 1997-1998, during which period Pacific Northwest exports declined by 25%, the absolute volume of containers shipped down river to Portland increased. The fastest rate of growth was experienced at Pasco, where container volume tripled from 1994 through 1998. Container volume at Boardman grew more than 50%, while at Lewiston the overall growth rate was lower but total volume was much higher than at Boardman or Pasco.



There is some debate as to the reasons behind the growth in container traffic, especially from Lewiston. It is possible that a large share of this growth was due to the fact that a number of container lines started calling at Portland, whereas before they called only at Puget Sound, and therefore there was incentive for both the lines and shippers to seek the cheapest inland transportation option. Another possible cause is that higher volumes of containerized cargo were shipped in order to demonstrate the importance of the Snake River navigation system.

**Figure 2 – Barged Container Trends on the Columbia/Snake River System**



Using the factors developed in Table 3 and Table 4, along with rail, road, and river distance tables, estimates were developed for the total cost saving that might be achieved with an export load center and the Port of Benton. These estimates assume that all of the hay, apples, beef, potatoes and forest products produced in the Port of Benton's hinterlands would shift from their current mode of transport to that facility.

As shown in Table 5 on the following page, for almost all of these commodities, there would actually be additional costs associated with shipping through an export load center at the Port of Benton. The exception is forest products, which might achieve savings of \$207,000 per year using such a facility. Even this benefit is suspect, though, because it does not include the cost of hauling the empty containers to the mills, since the ocean carriers had been covering this cost themselves.

Hay, on the other hand, would pay a penalty of more than \$10 million per year, apples \$8.8 million per year, potatoes \$2.1 million year, and beef \$305,000 per year. As stated above, these estimates assume that ALL of these cargoes generated in the Port of Benton's hinterlands shift to the export load center.

**Table 5 - Additional Cost to Ship Via Benton**

Where Produced	Hay	Apples	Beef	Potatoes	Forest Products	Total
Ellensburg	\$10,404,145	\$-	\$-	\$-	\$-	\$10,404,145
Tri-Cities	\$(365,998)	\$-	\$(26,787)	\$(4,006)	\$876	\$(395,915)
Yakima	\$-	\$3,682,052	\$-	\$-	\$-	\$3,682,052
Wenatchee	\$-	\$5,076,346	\$-	\$-	\$-	\$5,076,346
Toppenish	\$-	\$-	\$332,355	\$-	\$-	\$332,355
Moses Lake	\$-	\$-	\$-	\$1,896,666	\$-	\$1,896,666
Lewiston	\$-	\$-	\$-	\$-	\$(207,844)	\$(207,844)
Wallula	\$-	\$-	\$-	\$212,355	\$-	\$212,355
Total	\$10,038,147	\$8,758,398	\$305,568	\$2,105,014	\$(206,968)	\$21,000,160
Source: BST Associates						

**ATTACHMENT C: MARKET DEMAND ANALYSIS:  
DOMESTIC AUTOMOBILE DISTRIBUTION CENTER**

# **MARKET DEMAND ANALYSIS: DOMESTIC AUTOMOBILE DISTRIBUTION**

**Prepared By: BST Associates**

## **1.1 Introduction**

One of the concepts within the potential transportation business opportunities was the development of a domestic automobile distribution center. Under this concept, domestically produced automobiles would be railed from the U.S. origin of manufacture to the Hanford site for distribution to the rest of the PNW, including Washington, Oregon and Idaho.

The following section evaluates the feasibility of this concept by documenting:

- size of the domestic automobile market,
- potential origins of the domestic manufacture,
- existing domestic auto transportation logistics; and
- relative cost per auto of domestic distribution center at the Hanford site.

## **1.2 PNW Automobile Market**

According to Ward's Communications, a nationally recognized firm that tracks the U.S. auto industry, there were a total of 212,046 new cars and 251,889 new light trucks registered in the Pacific Northwest, during the 1998 model year.

More than half of these vehicles were registered in Washington, slightly more than one-third in Oregon, and about 10% in Idaho as shown in Table 6. The relative size of the population and income base in each state controls the size of auto market in each state.

These new registrations consist of approximately 348,000 units produced by domestic manufactures and 116,000 units imported from overseas.

**Table 6 – PNW New Vehicle Registrations, 1998 Model Year**

State	Idaho	Oregon	Washington	Total
Cars	16,549	79,273	116,224	212,046
Light Trucks	29,453	93,753	128,683	251,889
Total	46,002	173,026	244,907	463,935
Percent	9.9%	37.9%	52.8%	

Source: Ward's 1999 Automotive Yearbook, BST Associates

## **1.3 CURRENT PATTERNS OF DISTRIBUTION**

The origin of the domestic production is an important element in determining overall logistics patterns.

### 1.3.1 NAFTA Implications

U.S. automobile manufacturers' domestic plants are not all located in the United States. Due to NAFTA, as well as to earlier agreements covering the automobile trade, tariffs are imposed on vehicles manufactured in Canada or Mexico and sold in the U.S. market. As a result, the Big Three vehicle manufacturers have located plants in all three countries. In addition, all of the Japanese manufacturers, as well as some of the Europeans, have plants in the United States.

As shown in Table 2, 1998 vehicle production in North American totaled nearly 15.5 million units, with 12 million of that made in the U.S., 2.5 million in Canada and 1.5 million in Mexico.

**Table 7 - North American Final 1998 Model Light-Vehicle Production by Country**

	U. S.	Canada	Mexico	Total	'97 Total
Total Cars	5,834,556	1,377,731	1,052,178	8,264,465	8,284,166
Total Trucks	6,081,033	1,163,141	442,729	7,686,903	7,183,080
Grand Total	11,915,589	2,540,872	1,494,907	15,951,368	15,467,246

Note: Data is production for manufacturers' model year designations and vehicles which are not designated '99 models are not included

Source: Ward's 1999 Automotive Yearbook, BST Associates

### 1.3.2 U.S. Manufacturing Centers

The majority of vehicle manufacturing in the U.S. takes place east of the Mississippi River. Detroit may be the center of automobile manufacturing in the United States, but it is not the only place where manufacturing occurs. Michigan accounts for the highest output, at 2.8 million vehicles, but Ohio is also a major manufacturing center, with more than 1.8 millions produced in 1998, Kentucky accounts for nearly 1.2 million vehicles.

West of the Mississippi there are some states with substantial automobile industries, including Missouri, with nearly 1.2 million vehicles produced, California with 360,000 vehicles, Kansas 230,000, and Oklahoma 215,000, among others. See Table 4.

### 1.3.3 PNW Domestic Auto Logistics

The automobile trade in the Pacific Northwest is bi-directional, with cars produced in North America and destined for sale in the Northwest moving westbound by rail, and with imports bound for inland destinations moving east as a backhaul by rail. As shown in Table 3, virtually all of the westbound domestically-produced vehicles are shipped by rail.

The remainder of the PNW vehicles (e.g., approximately 25% of the total PNW sales) are trucked from the ports of Portland, Vancouver, Tacoma and Seattle to PNW locations.

**Table 8 - PNW Auto Trade Summary Number of Units by Origin/Mode**

Source	Truck	Rail	Total
North America		348,000	348,000
Imports	116,000	326,000	442,000
Total	116,000	674,000	790,000

Note: These estimates only include the Washington, Oregon and Idaho. However, Idaho is served primarily from Salt Lake City, Utah or Spokane, Washington.

Source: Ward's 1999 Automotive Yearbook, BST Associates

A nearly identical number of imported vehicles are then shipped back east on the same rail equipment. The fact that there is such a balance in the number of vehicles moving by rail in each direction is unique. Rail tends to be more oriented to one-way hauls. This balance makes the current distribution system very efficient, with equipment used at or near capacity at all times.

**Table 9 - Calendar Year Car Production by State**

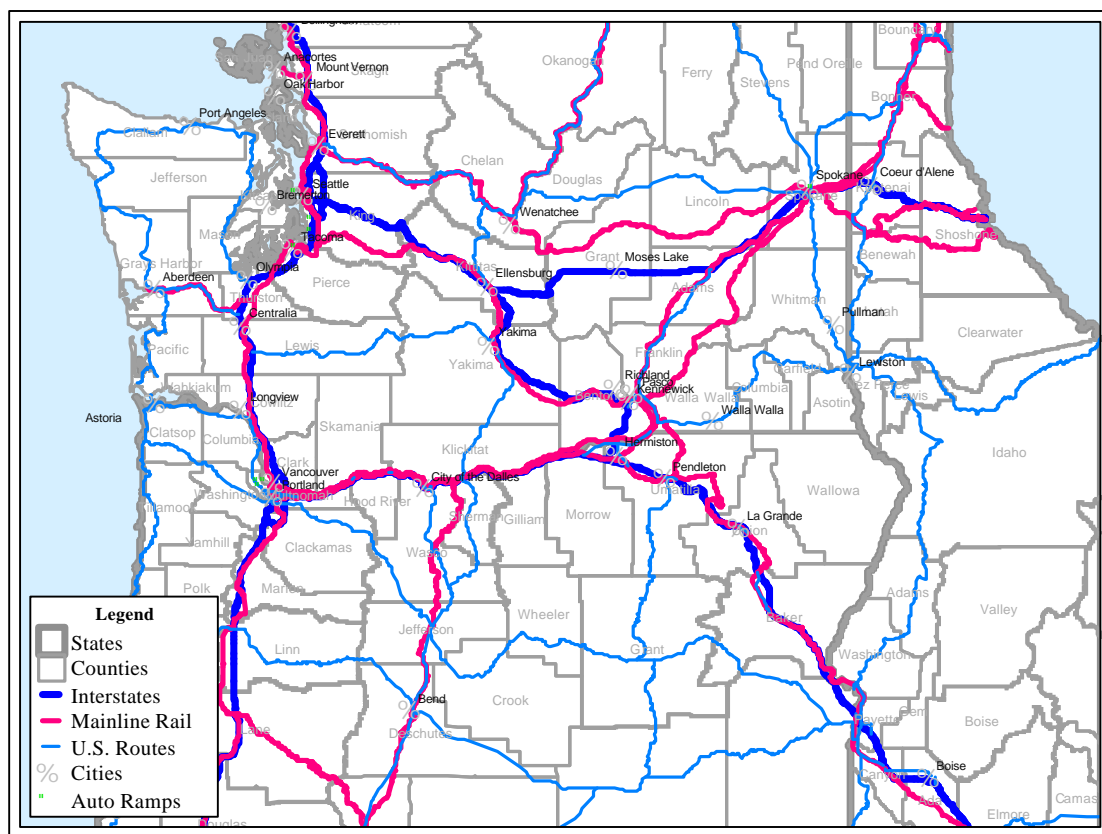
State	Cars		Trucks		Total	
	1997	1998	1997	1998	1997	1998
Michigan	1,884,669	1,718,689	1,121,266	1,063,688	3,005,935	2,782,377
Ohio	1,105,007	1,016,129	893,447	840,416	1,998,454	1,856,545
Missouri	179,830	169,763	1,002,204	1,020,214	1,182,034	1,189,977
Kentucky	429,646	412,776	675,859	773,088	1,105,505	1,185,864
Illinois	648,183	615,533	-	-	648,183	615,533
Tennessee	550,981	466,709	118,798	86,104	669,779	552,813
Georgia	248,124	257,035	252,673	257,236	500,797	514,271
Indiana	102,180	104,229	325,245	269,568	427,425	373,797
California	209,879	203,464	147,930	158,395	357,809	361,859
New Jersey	-	-	305,784	328,682	305,784	328,682
Delaware	82,083	87,799	33,849	182,041	115,932	269,840
Wisconsin	-	-	288,152	247,913	288,152	247,913
Kansas	239,030	232,203	-	-	239,030	232,203
Virginia	-	-	233,600	222,961	233,600	222,961
Oklahoma	191,366	215,242	-	-	191,366	215,242
Louisiana	-	-	164,104	188,123	164,104	188,123
Minnesota	-	-	164,826	186,491	164,826	186,491
Maryland	-	-	170,804	137,966	170,804	137,966
Texas	-	-	43,362	120,547	43,362	120,547
Alabama	-	-	19,462	68,727	19,462	68,727
S Carolina	62,943	54,802	-	-	62,943	54,802
Other	-	-	235,289	296,130	235,289	296,130
Total	5,933,921	5,554,373	6,196,654	6,448,290	12,130,575	12,002,663

Source: Ward's 1999 Automotive Yearbook, BST Associates

Automobiles are transferred on and off of rail cars at just a few auto ramps in the Pacific Northwest, as shown in Figure 3. These ramps are located in the Seattle-Tacoma area, the Portland area, and at Spokane.

With the exception of the auto ramp in Spokane, all of the other auto ramps are located near the sea ports of Seattle, Tacoma, and Portland, which handle automobile imports. This means that the ramps are located in population centers, for the distribution of domestic automobiles, as well as near ports, for the shipping of imported vehicles to inland destinations.

**Figure 3 – Location of Auto Ramps in the Pacific Northwest**



## 1.4 Cost to Distribute from Port of Benton

Based on the number of domestic vehicles registered in the Pacific Northwest, it is estimated that locating a domestic-vehicle distribution center at the Hanford site would increase the cost per vehicle an average of \$84. The additional cost to Pacific Northwest vehicle buyers in Washington and Oregon would be an estimated \$28 million per year.

**Table 10 – Cost Implications of Domestic Auto Load Center at the Hanford Site**

Cost Factor	Amount
Additional Truck Cost	\$37 million
Reduced Rail Cost	\$9 million
Net Cost	\$28 million
Per car cost increase	\$84/vehicle

Note: These estimates only include the Washington and Oregon market, since much of Idaho is served primarily from Salt Lake City, Utah or Spokane, Washington.

Source: BST Associates, Cost estimates come from the American Trucking Association F & OS Motor Carrier Annual Report and the Surface Transportation Board Rail Carrier Statistics.

This estimate takes into account the reduced distance that domestic autos would move via rail, as well as the increased distance that they would move via truck. It does not take into account the likely increase in costs due to import automobiles not being handled near domestic vehicles.



**ATTACHMENT D: MARKET DEMAND ANALYSIS:  
RAIL EQUIPMENT REPAIR AND REHABILITATION CENTER**

## **MARKET DEMAND ANALYSIS: RAIL EQUIPMENT REPAIR & STORAGE**

### **Prepared By: BST Associates**

The concept of using part of the Hanford site as a repair facility for rail equipment is examined in this section. The Hanford site has many amenities to offer rail repair businesses, including:

- large tracts of reasonably priced undeveloped land,
- existing buildings that can support this activity,
- access to the mainlines of two of the biggest railroads in the U.S.; and
- access to high-quality lead track.

The Livingston Repair Center (LRC) has developed a repair facility at the Hanford site and has become successful at attracting business and further developing the infrastructure and other requirements (especially job training) to expand this sector.

This section reviews the opportunities to further expand this sector by evaluating trends affecting rail locomotives, freight and passenger cars and light rail vehicles.

### **1.1 Freight Cars/Locomotives**

#### **1.1.1 Class I Railroads**

##### *Locomotives – Repair*

Rail traffic in the Pacific Northwest is dominated by the two major western railroads, Burlington Northern Santa Fe (BNSF) and Union Pacific (UP). Both networks extend from Seattle down to Los Angeles, east to New Orleans and North to Chicago.

Both of these railroads have been on major railroad buying sprees recently, with each line ordering hundreds of new locomotives. The majority of these new locomotives are high-horsepower alternating current (AC) units as opposed to the lower horsepower direct current (DC) locomotives that the railroads have been operating for nearly half a century.

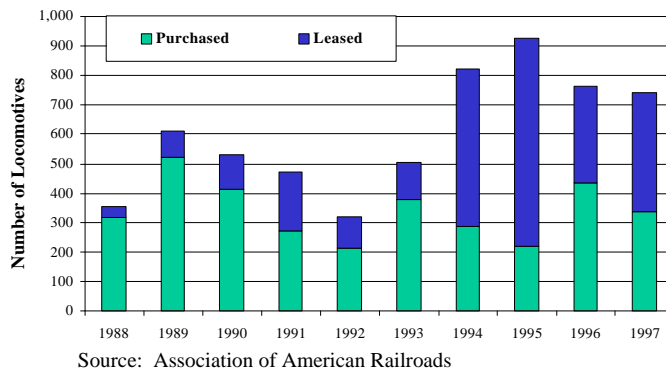
The effect of these purchases is that the railroad will be operating new machines that should require less maintenance. In addition, due to the additional horsepower of these units fewer locomotives will be needed for many trains. Typically, two of the newer locomotives will be able to replace three of the older type.

A third factor in the potential size of the Class I railroad locomotive repair market is the number of locomotives that are leased rather than purchased. It is often the case that the lessor is the locomotive manufacturer, and that the lessor is responsible for maintenance

of the locomotives. This tends to decrease the need for third-party maintenance. (See Figure 1).

**Figure 4 – Recent Locomotive Acquisitions**

## Class I Railroad Locomotives



### *Locomotives - Storage*

Storage of locomotives is another possible use for part of the Hanford site. The viability of this site for such a use would depend on a number of factors, including: 1) is the rail freight business cyclical, and 2) is the site geographically well suited for storage.

The quick answer to whether this site might be suitable for locomotive storage is “yes”, since this activity is already happening in the Tri-Cities area. The two questions posed above can be looked at in more detail, however.

Certain aspects of the rail freight business are, indeed, cyclical, while others are not. For example, coal and chemicals, two of the main commodities hauled by the railroads, tend to be shipped in relatively steady volumes throughout the year. But with other commodities, most notable grain and containers, there tends to be a definite peak season followed by a sharp decline in business.

The peak of the grain season occurs following harvest in the fall, at which time all available rail equipment is put to use. Fall also happens to be the peak season for hauling containers, as retailers stock up on goods for the Christmas season. After the fall rush, however, the need for locomotives drops off substantially, and the railroads need to park some of the locomotives.

The Hanford site may be geographically suited for some share of the locomotive storage market. Because much of the demand for container hauling is generated at ports on the West Coast, it may be advantageous to have equipment stored near there, in order to minimize the cost of positioning cars and locomotives. For grain also, as demand for transportation begins to drop the cost of moving empty equipment back to the Midwest

can be postponed until the following season by storing it on the West Coast, as at Hanford.

### *Freight Cars*

Freight cars may also present an opportunity for the Hanford site, both for repair and storage.

Unlike the locomotive fleets of the BNSF and UP railroads, the freight car fleets have not been modernized at the same rate. Because of this, the cars tend to be older, on average, and as they age they require additional repair work. The majority of the rail freight carried to and from the Pacific Northwest is grain and containers. Container cars, due to the relative newness of the container business and the changing design of cars, tend to be fairly new. Grain car fleets, on the other hand, tend to be much older, and may be a potential for repair at the Hanford site.

The storage of cars may also present an opportunity, as discussed in the previous section on locomotive storage. Because of the cyclical nature of both the grain and container hauling business there is a need to store cars for part of the year. Also, because of its location near the ocean ports of the Pacific Northwest the site does have a geographic advantage.

A major disadvantage of the Hanford site, which has not yet been discussed, is access by various railroads. The problem with the Hanford site rail line is that it accessed via a BNSF branch line that runs north from the BNSF Stampede Pass Line. Typically, there is a charge levied on one railroad by another for access to rail lines or for the handling of another line's equipment. So, there may be an added cost to use the site for any railroad other than the BNSF.

#### 1.1.2 Shortlines

There are a number of shortline railroads operating in the Pacific Northwest, most of which were created when branch lines were abandoned by the Class I railroads. Maintenance of locomotives and/or cars might present an opportunity for an operator at the Hanford site.

One factor that would influence this market is the size of the railroad concerned. Shortline railroads are almost all non-union low-cost operations. Because of this characteristic, railroad personnel perform many duties, including maintenance. For some of the larger operators, however, there may be a demand for out-sourcing.

Location is also important. For example, for a shortline railroad located west of the mountains that only owns and operates one locomotive, it may be impractical to ship that locomotive very far for maintenance. For those located closer to the site there may be a demand for a repair facility that can handle repairs that can not be done in-house.

Storage of equipment for shortlines is not a likely market. Because these lines typically operate at low cost and serve specific markets or customers, they are not likely to have much unused equipment.

## **1.2 Passenger Cars/Locomotives**

The largest passenger car operator in the Pacific Northwest is Amtrak, which operates in 45 states over more than 22,000 route miles. Amtrak owns or leases 343 locomotives (278 diesel and 65 electric) and an operating passenger car fleet of 2,272 cars.

Amtrak is attempting to find additional means to bolster their economic success. A recently released strategic business plan has dual goals of:

- Creating a more vibrant, modern national rail system to attract additional ridership, and,
- Becoming an operationally self-sufficient business.

One of Amtrak's strategies is to provide repair and rebuild services for third parties. Amtrak was recently successful at landing a repair and maintenance contract with the Fort Worth Transportation Authority. The contract is worth \$7 million and consists of complete overhaul and refurbishment of 10 bi-level commuter train coaches and modification of four diesel-electric locomotives. The work will be completed at Amtrak's heavy maintenance facility in Beech Grove, Indiana.

Amtrak recently completed a new maintenance facility in Seattle that should take care of most its demand for repairs in the PNW.

There are some smaller operators in the Pacific Northwest that might require maintenance or storage. The analysis of demand from shortline passenger rail operators is the same as that for shortline freight rail operators. Success in attracting their business depends on location, fleet size, and the finances of the operator. In general, most of this repair work is done in-house.

However, there is some demand for outside repair service, as evidenced by the contract recently signed by the Livingston Repair Center for work to be performed on Alaska Railroad Equipment.

## **1.3 Light Rail Transit Vehicles**

The only light rail operator currently operating in the Pacific Northwest is the MAX system operated by Tri-Met in Portland. Tri-Met operates its own maintenance and repair facility, and would be unlikely to need service from an operation at the Hanford site.

Seattle is in the process of developing a light rail system, but this, too, will have a dedicated maintenance and repair facility, likely to be located in the Duwamish Industrial area.

There has also been some study of developing a light rail system in Spokane, but these efforts have not progressed beyond the preliminary study stage.

## 1.4 Competitive Locations

Table 11 lists non-operating private sector firms in the Pacific Northwest (i.e., Washington, Oregon, and Idaho) that repair railroad rolling stock. This list is in addition to Livingston Rebuild Center, which is now operating on the Hanford site. In addition, Boise Locomotive, the former Morrison-Knudsen Rail Division, has re-commenced operations in Boise.

**Table 11 – Rail Equipment Repair Firms in the Pacific Northwest**

NAME	CITY	ST	EST EMP.	SALES
RAIL VENTURES	SANDPOINT	ID	3	Less than \$500,000
GUNDERSON SPRINGFIELD INC	SPRINGFIELD	OR	75	\$5 to 10 Million
CAHILL INC	AMBOY	WA	3	Less than \$500,000
GUNDERSON NW	KENNEWICK	WA	35	\$1 to 2.5 Million
NORTHWEST FREIGHT CAR	LONGVIEW	WA	7	\$500,000 to \$1 Million
BURLINGTON NORTHERN RAILROAD	ROSALIA	WA	3	Less than \$500,000
GUNDERSON TACOMA	TACOMA	WA	15	\$1 to 2.5 Million

Source: InfoUSA

In addition, the UP constructed a \$32 million dollar locomotive service and repair facility in 1996 at Hinkle, Oregon, which is located approximately 70 miles southeast of the Hanford site. This facility has 235 employees supporting the 24-hour a day, 7-day per week operating schedule. In addition to repairs, this facility fuels and readies approximately 90 locomotives per day.

## 1.5 Livingston Rebuild Center

Livingston Rebuild Center (LRC) is an employee-owned rail repair and service firm with shops in Livingston, Montana and Hanford, Washington as well as several strategically placed service facilities. See Figure 2. The company has approximately 238 current employees with 25 located at the Hanford site.

The Richland shop, which is called the LRC Railroad Research & Development Division, involves a lease from the Department of Energy for ten years at the 1171 Building. The company plans to build this facility up to approximately 60 employees to inspect, repair and rebuild locomotives and locomotive parts for customers in the United States, Mexico and Canada.

In addition to offering access to both BNSF and UP, the 1171 Building offers a high-bay with three rail spurs leading into a covered area, pits beneath the spurs for inspecting the

underside of locomotives and heavy shop equipment, including an overhead crane. The leased space currently totals 18,000 square feet with expansion opportunities available as demand requires.

LRC has also begun a process of networking designed to bring local assets together to create solutions to transportation problems. One of the first steps was to develop a relationship with Columbia Basin College patterned after the successful program established with Montana State University. Under this program, students seeking a new career are retrained. In addition, the joint program offered through the CBC's Workforce Training Center is designed to help with job descriptions, recruiting and screening potential employees as well as coordinating incentive programs and potential tax breaks for employers.

LRC is now evaluating means to use the considerable high-tech capabilities of the Batelle Lab and personnel as well as other firms in the PNW to develop high tech manufacturing products.

**Figure 5 – LRC's Facility Map**

**Source: LRC Website**



## **1.6 Conclusions**

The railroad freight and passenger industry is generally mature with slow but steady opportunities for growth. As noted above, there are cyclical buying patterns by the Class I railroads. Recently, this has included upgrades in locomotives and to a lesser extent in freight cars. Often, these purchases or leases are tied with maintenance contracts, which tends to diminish third party opportunities. There is growth in the passenger car and light rail market but new facilities are also being planned to maintain and repair the associated rolling stock.

The repair business is a very competitive business with several firms vying for the same market. The success of this sector in the Hanford area depends upon LRC, which is well established. The recent award of the Alaska Railroad contract to LRC demonstrates their capabilities. Growth in the repair business in Hanford appears to be guardedly optimistic. The company plans to increase staff up to 60 employees appear to be reasonable.

However, beyond the repair business, there are significant opportunities in applying high tech processes to the railroad industry. This could include manufacture of new cars, interiors or other structures as well as to telecommunications. This opportunity could increase Hanford area employment significantly. The real estate group has suggested that transportation equipment manufacturing could increase by 300 jobs in the next 20 years. Much of this growth hinges upon further development of the rail manufacturing and service sector. The reader is referred to these sections for more information about these opportunities.